

ALL FILTRATION PRODUCT PROUDLY MADE & ASSEMBLED IN THE USA



EWS, INC.

ENVIRONMENTAL WATER SYSTEMS

EWS, Inc. and Environmental Water Systems supports all older models and systems

**Reverse Osmosis Product Booklet
for Five Stage Systems with Booster Pumps**

RU500T35w/BP or RU500T35w/UV/BP

ewswater.com

O: 702.256.8182 (M-F 8:30am-4:30pm PST)

F: 702.256.3744

E: customerservice@ewswater.com

Complete Product Booklets and Service Guides for each system are available online and through customer service.

Information includes all schematics, technical information, removal capabilities, how to setup, install & startup each system as well as any troubleshooting and any other information we could think of in order to help you.

Highest Quality Product & Award Winning Customer Service Since 1987

Reverse Osmosis Undercounter Filtration Units Five Stage Series with Booster Pump for Heavy Sediment, High TDS and/or Particulate Water

Model Nos: RU500T35w/BP or RU500T35w/UV/

Five stage series for unusually heavy sediment or particulate, potable (non-chlorinated) well water. Three stages to protect and filter prior to TFC membrane with post filter for polish. Available with or without either UV module

Meets or complies with NSF Standards 42, 58 and 55 with UV option.

Filter Replacement: SET.RU500T35
 SET.RU500T35-UV-2.PIN (white cord)
 SET.RU500T35-UV-4.PIN (red striped cord)



A booster pump is used with a reverse osmosis system to provide the proper rejection rates. The unique design features of the pump provide superior performance characteristics to deliver a near constant “boost” pressure to the R.O. membrane required in low inlet water pressure applications or extreme conditions that effect pressure over the membrane and R.O. performance. See additional information

Please see notes on RO rejection rates, other device connection issues, information on aggressive water, proper application and more information on these systems in this section of this product manual.

All completely assembled reverse osmosis systems include the following standard features:

White 10” housing with filtration cartridges, spanner wrench to open housings for easy filter replacement, easy to use membrane housing, chrome, lead-free faucet with white trim (with air gap adaptor) for dispensing water, self-piercing saddle valve for water line connection with shut-off valve (see service guide for your correct application), all necessary tubing (color coded) to make proper connections, simple to use mounting bracket, UV lamp and setup (UV unit only), pump (booster pump units only), drain saddle and bladder tank, complete service guide with installation and use instructions.

All units are upgraded to produce more water and waste less. All units include a 3.2 gallon storage tank and we incorporate our control valve which monitors flow and operates as a check valve/backflow prevention and an automatic shut-off to protect the system.

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Five Stage Series

(For Heavy Sediment / Particulate/High TDS)

Model #s: RU500T35w/BP, RU500T35w/UV/BP

Five stage 35 GPD TFC membrane for unusually heavy sediment, high total dissolved solids (TDS), and/or particulate well water. Three stages to protect and filter prior to the TFC membrane. Post filter for polish after membrane prior to storage tank. Booster pump provides adequate pressure to the feed water, in order that, the system works properly under these circumstances.

Available with or without UV module.

All units meet or complies with NSF Standards 42, 58 and 55 with UV option.

- * Faucet with Chrome, Lead-Free Dispenser
- * Powder Coated, Corrosive Resistant Bracket Mounts Easily
- * Quick Connect Fittings for Easy Installation
- * Easy to Use Membrane Housing and 10" Heavy Duty Filter Housings Contain our Full Sized Cartridges for Optimum Performance and Longer Life
- * Replacing Filters is Easy; Use the Included Spanner Wrench to Spin Housing Off, Replace Filter, Spin Housing Back On



Benefits:

- * Safeguards and Kills Bacteria, Viral, E-Coli and other Microorganisms (with UV option)
- * Reduces Total Dissolved Solids, Minerals and Inorganics
- * Reduces Lead and Cysts (Cryptosporidium and Giardia)
- * Reduces Dirt, Sediment and Rust (additional filtration for more extreme conditions)
- * Improves Taste, Clarity and Odors
- * Removes Chlorine and VOC's
- * Replaces Costly Bottled Water
- * Better Tasting, Filtered Water for Coffee, Tea, Juices and Ice

Applications:

- * Installs Easily at Any Sink, Wet Bar or Any Point of Use Location
- * Can be Cross-Connected (if applicable) to Refrigerators, Ice Makers and Other Devices**
- * For All Your Drinking and Cooking Needs

All completely assembled reverse osmosis systems include the following standard features:

White 10" housing with filtration cartridges, spanner wrench to open housings for easy filter replacement, easy to use membrane housing, chrome, lead-free faucet with white trim (with air gap adaptor) for dispensing water, self-piercing saddle valve for water line connection with shut-off valve (see service guide for your correct application), all necessary tubing (color coded) to make proper connections, simple to use mounting bracket, UV lamp and setup (UV unit only), pump (booster pump units only), drain saddle and bladder tank, complete service guide with installation and use instructions.

All units are upgraded to produce more water and waste less. All units include a 3.2 gallon storage tank and we incorporate our control valve which monitors flow and operates as a check valve/backflow prevention and an automatic shut-off to protect the system.

Please see notes on RO rejection rates, **other device connection issues, information on aggressive water, proper application and more information on these systems in this section of the product manual

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Technical Information: RU500T35w/BP, RU500T35w/UV/BP

REPLACEMENT FILTERS

Part No.	Description	Replacement Time*	Application
PRESED-05	5 Micron Sediment Cartridge	Up to a Year	All
RO-M-TFC	35 GPD TFC membrane	Up to 18 months	All
GAC-00	10" GAC Cartridge	Up to a Year	All
RO-F-GAC-500	Carbon Prefilter	Up to a Year	All
RO-F-INLINE	Carbon Postfilter	Up to a Year	All
UV-LAMP or UV-LAMP-4.PIN **	6 watt UV Replacement Lamp	Annually	Option with UV

FILTER SPECIFICATIONS:

Pre-Filter: PRESED-05

Construction: 100 % Pure Polypropylene Fibers
 Temperature Range: 40-145° F (4.4 -62.8C)
 Maximum Flow Rate: 5 gpm(19 lpm)
 Dimensions: 2 - 3/8" x4-7/8" (61mm x 124 mm)
 Micron Rating: 5 µm Nominal
 Initial Pressure Change: 2.00 psid @1.0 GPM
 Fits all Standard 10" Housings Meets FDA Requirements for food and beverage contact.

Membrane: RO-M-TFC

Construction: Thin Film Cellulose
 Temperature Range: 40° to 85°F (4.4° to 29.5° C)
 Maximum Flow Rate: 1 gpm(3.875 lpm)
 Dimensions: 1.75" x 11 3/4" (44.5 X 298.5 mm)
 TDS Rejection : 90 - 98% Test Feed Conditions: 500 PPM San Diego Tap @65 PSI and 77°F.
 Maximum Feed Turbidity: 1 NTU
 Maximum Pressure: 125 PSI
 Chlorine Residual: 2.0 PPM Max. / 0.2 PPM Min.
 All Materials meet FDA requirements and meets or complies with NSF Standard 58.

Post Filter: GAC-00

Vibration Packed Granular Activated Carbon
 Carbon Wt.: 0.75 lbs. Iodine Rating No. 1100
 Temperature Range: 40° to 125°F (4.4° to 52° C)
 Maximum Flow Rate: 1 gpm (3.875 lpm)
 Dimensions: 2- 7/8" x 9 3/4" (73 X 248 mm)
 Micron Rating: 5 µm Nominal
 Initial Pressure Change: 2.00 psid @1.0 GPM
 Chlorine Reduction: 2,500 Gal. @ 1.0 GPM
 Fits all Standard 10" Housings
 Cartridge is Tested and Certified by International ANSI/NSF Standard 42 - Conforms to requirements.

SHIPPING INFORMATION

Carton Size.: 17"W x 16"L x 17"H
 Carton Wt.: 40 lbs. / 12.3 Kgs.

Post Filter: RO-F-GAC-500

Construction: Granular Activated Carbon
 Temperature Range: 40° to 125°F (4.4° to 52° C)
 Maximum Flow Rate: 1 gpm(3.875 lpm)
 Housing Inlet / Outlet Size: 1/4 in. O.D. tube female Quick Connect x 1/4 in. MNPT
 Dimensions: 2- 7/8" x 9 3/4" (73 X 248 mm)
 Micron Rating: 5 µm Nominal, Iodine No. 1100
 Initial Pressure Change: 2.00 psid @1.0 GPM
 Chlorine Reduction: 2,500 Gal. @ 1.0 GPM
 Carbon Wt.: 0.75 lbs. Fits all Standard 10" Housings
 Cartridge is Tested and Certified by International ANSI/NSF Standard 42 - Conforms to requirements.

Post Filter: RO-F-INLINE

Construction: Granular Activated Carbon
 Temperature Range: 40° to 125°F (4.4° to 52° C)
 Maximum Flow Rate: 1 gpm(3.875 lpm)
 Micron Rating: 5 µm Nominal
 Initial Pressure Change: 2.00 psid @1.0 GPM
 Cartridge is Tested and Certified by International ANSI/NSF Standard 42 - Conforms to requirements.

Ultraviolet Lamp: UV-LAMP or UV-LAMP-4.PIN (Optional; specify unit w/UV)

Construction: 316 Bonded Stainless Steel Interior,
 Temperature Range: 40-105° F (4.4 - 40°C) Maximum Flow Rate: 1.0 gpm (3.875 lpm), Dimensions: 2 in. O.D. x 11.50 in. L (51 mm x 292 mm) U.V Rating Output: 30,000 micro-watts at maximum flow, Watts: 6 Ports: 1/4 in. UV Module meets or complies with NSF Standard 55. All materials meet FDA or NSF requirements. The UV unit was effective in killing (> 99%) E-coli and significantly reducing the level of micrococcus luteus.

** Note:

UV-LAMP (Pre-2010) has white cord and UV-LAMP-4.PIN (Post-2010) has red striped cord. Please specify properly



Filter Cartridge Replacements for 5-Stage Reverse Osmosis Systems

Model No: PRESED-05

Replace: up to a year*

Pre-Sediment Filter (5-micron)

5-Micron Prefilter is a pure, high quality polypropylene depth filter, with no fillers or binders, with exceptional dirt holding capability. The removal of any dirt, silt, rust or suspended matter protects the remaining cartridges and extends the performance of other filters. This Prefilter is standard in all our undercounter drinking water systems and reverse osmosis units.

Meets or complies with all FDA requirements for food and beverage contact.

In Use With: RU500T35w/BP, RU500T35w/UV/BP



Model No: GAC-00 **Replace: up to a year***

Granular Activated Carbon (GAC) Postfilter++

This vibration packed cartridge uses the highest quality (Iodine No. 1100) granular activated carbon for effective reduction of taste, clarity and odor problems such as Chlorine and VOC's. Cartridges are designed to allow water to pass through entire carbon bed to allow maximum adsorption. This Postfilter is standard in our Reverse Osmosis Units.

Meets or complies with NSF Standard 42. See Removal Reference Chart.

In Use With: RU500T35w/BP, RU500T35w/UV/BP



Model No: RO-F-INLINE

Replace: up to a year*

2" x 10" In-Line Carbon Filter is designed specifically to eliminate objectionable tastes and odors from the water supply. This postfilter will reduce most other contaminants that may find their way past the RO membrane to polish the taste of the water. Used in all four and five stage reverse osmosis systems.

Meets or complies with NSF Standard 42.

In Use With: RU500T35w/BP, RU500T35w/UV/BP



++Compare to loosely filled cartridges using carbon of lower Iodine No's. (industry standards are 600-650, imported filters may meet minimum compliances at 450). Be cautious of impregnated papers, KDF media and/or combined materials and filter purposes. Be aware of smaller filter diameters and limited time, usage and replacement requirements.

***Replacement is based on local water conditions and usage.
Replace as needed and/or not beyond recommended time limit**

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Filter Cartridge, Membrane and UV Lamp Replacement (optional) for 5-Stage Reverse Osmosis Systems

Model No: RO-F-GAC-500

Replace: up to a year*

Granular Activated Carbon (GAC) Filter is designed for well water applications. Effective reduction of taste, clarity and odor problems such as Chlorine and VOC's. Cartridges are designed to allow water to pass through entire carbon bed to allow maximum adsorption. Used as additional carbon filter in all 5 stage reverse osmosis units. Meets or complies with NSF Standard 42. See Removal Reference Chart.

In Use With: RU500T35w/BP, RU500T35w/UV/BP



Model No: RO-M-TFC

Replace: up to 18 months*

TFC Membranes - Reverse Osmosis Systems

TFC membrane removes Total Dissolved Solids to improve the taste and quality of water. Tap water is forced by pressure through a semi-permeable membrane while dissolved solids and particulates are left behind. The TFC membrane, even though it provides more water per day, is chlorine intolerant and used correctly only on potable, non-chlorinated water. Available on all our reverse osmosis units with a T35 code in the model number.

Meets or complies with NSF Standard 58. See Rejection Rates.

In Use With: RU500T35w/BP, RU500T35w/UV/BP



Model No: UV-LAMP or UV-LAMP-4PIN (lamp only)**

Replace: Annually, or as needed*

UV Lamp - UV Bacteria-Kill Units

UV Unit has a 6 Watt UV lamp that effectively kills bacteria (>99%). 316 Bonded Stainless Steel Interior enhances kill power by reflecting UV light and eliminates degradation of polypropylene housing. Due to advanced design, water is spun through the module to eliminate shadowing and shading which additionally maximizes kill power. Made in USA. Lamp Life: To be replaced after 1 year of continuous operation.

UV Module meets or complies with NSF Standard 55. See Testing.

In Use With: RU500T35w/UV/BP



** Proper lamp replaced is either 2-PIN (white cord, Pre-2010) or 4-PIN (red striped cord, Post-2010 to Present) and should be identified correctly in order to order the proper replacement lamp or complete set for your reverse osmosis system with uv upgrade.

***Replacement is based on local water conditions and usage.
Replace as needed and/or not beyond recommended time limit**

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FDA*, EPA and NSF** Compliances

Please be advised that all the materials and components utilized in producing all POU (Point of Use) drinking water filtration and reverse osmosis systems, and all POE (Point of Entry) filtration, conditioning and softening equipment, by EWS, Inc., comply with, but are not limited to, one or more of the following regulating standards:

NSF STANDARD 14	FDA 21 CFR 177.1520	FDA 21CFR 177.1640	FDA 21 CFR 177.1350
FDA 21 CFR 175.105	CAS # 7440-44-0	ANSI 304	CDA C360000
NSF STANDARD 60	NSF STANDARD 61	NSF STANDARD 58	ANSI 302
ANSI 316	FDA 21 CFR 177.2600	FDA 21 CFR 175.300	FDA 21 CFR 177.2550
NSF STANDARD 52	NSF STANDARD 42	NSF STANDARD 18	FDA 21 CFR 177.2550
FDA 21 CFR 177.1655	FDA 21 CFR 177.1630	FDA 21 CFR 177.2800	FDA 21 CFR 175.300
FDA 21 CFR 177.2260	FDA 21 CFR 181.32	FDA 21 CFR 177.2660	FDA 21 CFR 177.1950
FDA 21 CFR 177.2910	FDA 21 CFR 177.2250	FDA 21 CFR 177.1680	NSF STANDARD 53
NSF STANDARD 55	CAAB1953		

- *The standards listed above relate to the Code of Federal Regulations of the United States of America, Title 21, Charter 1, Subchapter B set forth by the U.S. Food and Drug Administration.
- **The NSF (National Sanitation Foundation) standards correlate to materials and potable water. The National Sanitation Foundation is not a government agency.

Furthermore, and without, exception every component included in all POU and POE systems by EWS, Inc. are compliant for food and beverage contact and/or meet or comply with the most current, appropriate, and applicable standards without exception.

All EWS product has been independently tested to NSF standards by an accredited third-party laboratory for all claims made regarding NSF/ANSI standards.

Please take note of this helpful and enlightening information on this confusing subject:

Contrary to common belief and less than truthful marketing, drinking water treatments units are NOT required to be "NSF Certified" (as tested by NSF itself), but they must be independently tested to applicable NSF standards by an accredited, independent laboratory. Though the test standards bear the NSF/ANSI name, NSF is just one of many accredited institutions.

- All EWS Product is No-Lead Compliant to California AB1953 and the No-Lead Standards which will take effect throughout the USA as of 2014.

Factory Preparation:

All systems are factory prepared and thoroughly checked to assure proper function and if applicable, quality tests of product water produced to assure that minimum standards of rejection have been met, and/or tests of specific components to assure correct function and flow rate measurements to assure efficiency specifications are met.

Product Performance:

- ◆ For all product capabilities, compliances and/or warranties to remain valid, all systems are dependent upon proper application, specification, and installation of any specific unit and/or combination of units.
- ◆ Please know your local or individual water condition(s), and plumbing application(s). Please review system(s) capabilities, applications, setup, installation, startup, maintenance, and related warranties.
- ◆ Detailed information is published in EWS Product Manuals and specific Product Service Guides (included with each specific unit) and made available upon request throughout US distribution and/or EWS corporate offices. All current information is available online @ www.ewswater.com

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Summary of Performance Guidelines, Factory Preparation, Product Performance, and Compliances

Product performance may vary based on local water conditions, proper product specification and application, proper plumbing application, setup, installation, startup, maintenance and/or usage. To ensure proper operation, follow all setup, installation, start-up and maintenance procedures as detailed in all service guides. In addition, follow all applicable local plumbing codes.

The feed water must comply with the following conditions for all systems capabilities, compliances, and warranties to remain valid. All commercial POU and POE systems: Performance guidelines and feed water compliance dependent on specification and application, please consult with EWS, Inc. upon specification.

Water Temperature Range:	minimum 40°F, maximum 80°F		
Water Pressure:	Point of Use (POU):	minimum 40 psi, maximum 75 psi;	
	Point of Entry (POE):	minimum 40 psi, maximum 75 psi	
Water Flow Rates:			
Point of Use (POU):	water supplied to residential sink product:	at a minimum of 1 gpm	
Point of Entry (POE):	water supplied to tanks up to 1054:	at a minimum of 8 gpm	
	water supplied to 1354 tanks:	at a minimum of 12 gpm	

All product must be connected to main or cold water supplies. Product not intended to be connected to hot water supplies or allow heated water to flow through systems. Contact EWS, Inc. for product available for this purpose.

All product contain water. Do not allow any product to freeze.

Do not use where water is microbiologically unsafe or with water of unknown quality without adequate disinfection before or after the unit(s).

Reverse Osmosis Systems Only: Never allow reject water to be hindered or stopped, without the reject water flow or improper drain connection, impurities may build up on membrane.

Point of Entry (POE) Units: Do not prevent backwash or brine lines to be stopped or restricted. Create and allow air gap to prevent any cross contamination.

Compliances:

Please be advised that all the materials and components utilized in producing all POU (Point of Use) drinking water filtration and reverse osmosis systems, and all POE (Point of Entry) filtration, conditioning and softening equipment, by EWS, Inc., comply with, but are not limited to, any one or more of the appropriate regulating standards. Furthermore, and without exception, every component included in all POU and POE systems by EWS, Inc. are compliant for food and beverage contact and/or meet or comply with the most current, appropriate, and applicable standards without exception.

Factory Preparation:

All systems are factory prepared and thoroughly checked to assure proper function and if applicable, quality tests of product water produced to assure that minimum standards of rejection have been met, and/or tests of specific components to assure correct function and flow rate measurements to assure efficiency specifications are met.

Product Performance:

- ◆ For all product capabilities, compliances and/or warranties to remain valid, all systems are dependent upon proper application, specification, and installation of any specific unit and/or combination of units.
- ◆ Please know your local or individual water condition(s), and plumbing application(s). Please review system(s) capabilities, applications, setup, installation, startup, maintenance, and related warranties.
- ◆ Detailed information is published in EWS Product Manuals and specific Product Service Guides (included with each specific unit) and made available upon request throughout US distribution and/or EWS corporate offices. All current information is available online @ www.ewswater.com

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Removal Chart for Carbon Filter Cartridges - All RU Units



EWS carbon filters meet or comply with NSF Standard 42 for reduction of Chlorine and other Volatile Organic Compounds. The cartridge is comprised of granular activated carbon which provides exceptional filtration capacity and effectively reduces by an average of 98.5% chlorine, voc's, bad taste and odor in drinking water.

About Municipally-Treated Water

Municipal water is heavily regulated, monitored, tested, filtered and treated. Most taste, quality and health issues are directly related to the treatment or disinfection of the water and their by-products, as well as man-made pollutants common to most water (see reference #'s below generally between 3 to 5). Issues with heavy metals and primary contaminants (see reference #'s below generally between 0 to 2) are highly regulated and effectively treated by water utilities. These contaminants are rarely an issue with water quality.



How to Use the (GAC) Carbon Filtration Reference Chart

Below is a simple reference chart to give some perspective as to GAC's capabilities with various substances. Some items are heavy metals and inorganics, while others are VOC's (volatile organic compounds), some of which are man-made pollutants. Still other items, such as hardness, are not even considered contaminants. In general, GAC is very economical and a great compliment to municipally-treated water without the disadvantages of more aggressive filtration. GAC is used in all filtration due to its removal capacities. Know your water to select the correct product for you, your family and your home.

Acetaldehyde	4	Emulsions	2	Lead	3	Precipitated Sulfur	2
Acetic Acid	3	Ethyl Acetate	5	Lime	0	Propioic Acid	4
Acetone	4	Ethyl Acrylate	5	Mercaptans	4	Propionaldehyde	3
Alcohols	4	Ethyl Alcohol	4	Metal Salts	1	Propyl Acetate	4
Alkalinity	1	Ethyl Amine	4	Methyl Acetate	4	Propyl Alcohol	4
Amines	3	Ethyl Chloride	4	Methyl Alcohol	4	Propyl Chloride	4
Ammonia	3	Ethyl Ether	4	Methyl Bromide	5	Radon	4
Amyl Acetate	5	Fertilizers	1	Methyl Chloride	4	Rubber Hose Taste	5
Amyl Alcohol	5	Fluorides	2	Methyl Ethyl Ketone	5	Seawater	1
Antifreeze	4	Formaldehyde	2	Naphtha	5	Sediment	2
Arsenic	1	Gasoline	5	Nitrates	0	Soap	3
Benzene	5	Glycols	5	Nitric Acid	3	Sodium Hypochlorite	5
Bleach	5	Hardness	0	Nitrobenzene	5	Soluble Iron	2
Boron	1	Heavy Metals	3	Nitrotoluene	5	Solvents	4
Butly Alcohol	5	Herbicides	5	Odors (General)	5	Sulfuric Acid	1
Butly Acetate	5	Hydrogen Bromide	2	Oil - Dissolved	5	Sulphonated Oils	4
Calcium Hypochlorite	5	Hydrogen Chloride	1	Oil - Suspended	2	Suspended Matter	2
Carbon Dioxide	0	Hydrogen Fluoride	1	Organic Acids	4	Tannins	4
Chloral	5	Hydrogen Iodide	2	Organic Esters	5	Tar Emulsion	4
Chloramine	4	Hydrogen Peroxide	5	Organic Salts	4	Tartaric Acid	4
Chloroform	5	Hydrogen Selenide	3	Oxalic Acid	5	Taste (DI Water)	4
Chlorine	5	Hydrogen Sulfide	3	Oxygen	5	Taste (From Organics)	4
Clorobenzene	5	Hydrochlorous Acid	5	Ozone	4	THM's	5
Chlorophenol	5	Inorganic Acids	1	PCB's	5	Toluene	5
Chlorophyll	4	Inorganic Chemicals	1	Pesticides	5	Toluidine	5
Citric Acid	4	Insecticides	5	Phenol	5	Trichlorethylene	5
Cresol	5	Iodine	5	Phosphates	0	Turpentine	5
Defoliants	5	Isopropyl Acetate	5	Plastic Taste	5	Urine	2
Detergents	3	Isopropyl Alcohol	5	Plating Wastes	3	Vinegar	3
Diesel Fuel	5	Ketones	5	Potassium Permanganate	4	Xanthophyll	4
Dyes	5	Lactic Acid	4	Precipitated Iron	2	Xylene	5

KEY TO THE ABOVE LIST FOR CARBON FILTRATION:

5 - EXCELLENT: Proven Application **4 - VERY GOOD:** Proven Application **3 - GOOD:** Very Acceptable Result
2 - FAIR: limited application **1 - POOR:** not a recommended application (See RO) **0 - Not applicable** (See RO)

- Carbon Block technology has additional filtration capabilities and is the last stage in all EWS Essential Drinking Water Systems. See additional information.
- UV Disinfection for greater safeguards (DWS-UV, optional with Reverse Osmosis). See additional information.
- To prevent the absorption and inhalation of chlorine, chloramine, VOCs, by-products and pollutants. See CWL or EWS Whole Home Systems for GAC filtration to the entire home for bathing, showering and all uses.

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UV Disinfection Technical Specifications

RU500T35w/UV/BP



Proper lamp replaced is either 2-PIN (white cord, Pre-2010) or 4-PIN (red striped cord, Post-2010 to Present) and should be identified correctly in order to order the proper replacement lamp or complete set for your reverse osmosis system with uv upgrade.



Lamp within the UV module which provides for the safeguard against Bacteria, E-coli, Viral and other Microorganisms and meets or complies with NSF Standard 55. See specifications and testing below.

Lamp Information:	Life specified up to 1 year of continuous operation based on testing protocol**	
Housing:	2" O.D. x 11.50" L	Fittings: Compression x 1/4 in. MNPT
Bulb Wattage:	6 Watts	UV Output: 30,000 micro-watts at maximum flow rate
Min/Max Water Temp:	40° to 85°F (4.4° to 29.5° C)	Max Water Pressure: 60 PSI / 4.14 Bar
Flow Rate :	<1.0 GPM / 3.78 LPM	
Max Static Temp Rise:	up to 16.1° F above ambient - Water will be warm when sitting. Run water until cool.	

Lower Housing contains a 316 bonded stainless steel interior for better UV contact which maximizes killing power by reflecting UV light and the off-centered in/out, side ports allow water to spin through module to eliminate any shadowing or shading during UV contact. Sight port allows consumer to see whether UV lamp is on.

Upper Housing Cap seals module and contains opening and easy-to-clean quartz sleeve where UV lamp is inserted.

UV Lamp with snap-fit top, 4 pin red cord with electrical step-down transformer. Never open upper housing cap. Just simply pull lamp out for removal and snap back in for replacement. Electric connection is simple plug in.

UV Results: "The unit was effective in killing E-coli and significantly reducing the level of micrococcus luteus. Based on previous testing, the unit produces approximately 17,000 μwatt/seconds when operated at a low rate of 0.75 gallons per minute." TRUESDAIL LABORATORIES, INC., TUSTIN, CA, U.S.A. 1989 LABORATORY NO. 26995.

Organism Tested	Control Count	Exposed Count	Percent Reduction of Control
E-Coli	1,400,000	<1*	>99.99992
Micrococcus Luteus	500,000	1170	99.66
Micrococcus Luteus	500,000	850	99.83

The unit was tested by pumping bottled spring water seeded with E-coli (ATCC 8739) and Micrococcus luteus (ATCC 9341) through at a rate of 0.75 gallons per minute. The unit was allowed to warm up five minutes before testing. Samples of the exposed and non exposed water were taken and duplicate plate counts conducted (plate Count Agar, 35C, 48 hours). The results are given above.:

**Warning: The UV lamp is effective through one year of continuous service and must be replaced annually to maintain a 99% effective rate.



- * Lower Housing contains a 316 bonded stainless steel interior for better UV contact which maximizes killing power by reflecting UV light and the off-centered in/out, side ports allow water to spin through module to eliminate any shadowing or shading during UV contact.
- * Upper Housing Cap seals module and contains opening and easy-to-clean quartz sleeve where UV lamp is inserted.
- * UV Lamp and electrical step-down transformer, both with snap-fit cap for easy lamp removal.
- * Sight port allows consumer to see whether UV lamp is on.

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APPROXIMATE RO REJECTION RATES OF VARIOUS IMPURITIES*

Aluminum	up to 98%	Manganese	up to 98%	Barium	up to 92%	Mercury	up to 97%
Bicarbonate	up to 98%	Nitrate	up to 95%	Bromide	up to 96%	Organic Pesticides	up to 98%
Cadmium	up to 98%	Phosphate	up to 98%	Calcium	up to 98%	Polyphosphate	up to 98%
Chloride	up to 98%	Potassium	up to 98%	Lead	up to 98%	Copper	up to 98%
Radium	up to 98%	Cyanide	up to 96%	Silica	up to 98%	Detergents	up to 98%
Silicate	up to 98%	Fluoride	up to 98%	Sodium	up to 96%	Iron	up to 98%
Sulfate	up to 98%	Radioactivity	up to 97%	Boron	up to 70%	Magnesium	up to 97%
Ammonium	up to 90%	Nickel	up to 98%	Strontium	up to 97%	Silver	up to 96%
Chromium	up to 96%	Chromate	up to 95%	Sulphite	up to 96%	Thiosulfate	up to 98%
Ferrocyanide	up to 98%	Borate	up to 50%	Selenium	up to 95%		
Zinc	up to 98%	Arsenic	up to 95%	Orthophosphate	up to 98%		

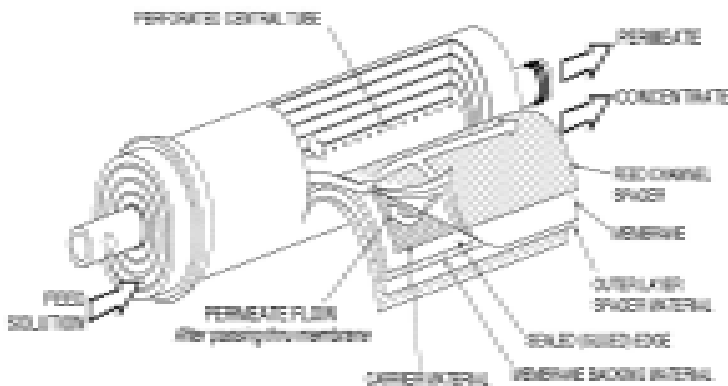
* Operational, maintenance, and replacement requirements are essential for the product to perform as tested and specified.

Rates based on the following test feed water:

Temperature: 77°F (25°C) TDS: 500 ppm. Pressure: 60 PSI.

Membranes meet or comply with NSF Standard 58.

*This is partial list or sample of impurities. New items are added based on developing protocols and standards.
Go to www.EWSWATER.com for the most complete and updated information.*



TFC (Thin Film Composite): TFC membrane is a long-life membrane for non-chlorinated water supplies. A carbon filter must precede the RO element if used on chlorinated feedwater. Product water produced = 10 - 50 gallons per day.

Performance Parameters

TFC

Daily Production Rate
(To Atmosphere at 4.25 Kg/Sq. cm: 60 PSI:
25° C/ 77° F: 500 mg/l. TDS
Average TDS Rejection
Feed Water Chlorine Tolerance
Feed Water Temperature
Feed Water pH
Feed Water Pressure*
Maximum TDS
Maximum Hardness**
Maximum Iron Feed Water
Maximum Manganese Feed Water
Free Chlorine Feed Water
System Recovery Rate

up to 35 GPD

94-98%

No unless carbon prefilter

5-30° C/40-90° F

3.0 - 11.0

3-6 Kg/Sq cm/40-75 PSI

2000 mg./l

350 mg./l

0.1 mg./l

0.05 mg./l

< 1.5 mg./l

20% @ 4.25 Kg./Sq. cm.

Notes: *see Booster Pump option, **20.5 grains per gallon

See the next pages:

- Determine whether reverse osmosis is right for your needs or application.
- Determine whether or not you may need a booster pump option (RU500T35 series only)

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Reverse Osmosis or “RO” has become a term that has slipped into our common language. When you need a tissue and ask for a “Kleenex”, its not the brand you need, it’s the tissue. It’s the same with RO. You may ask for the device or told that you need one, or be considering buying one without understanding what you’re asking for. Unlike the tissue, this decision can be impactful.

How does an RO work?

Water is forced by pressure through a semi-permeable membrane while dissolved solids and particulate matters are left behind. The residual contaminants are flushed to the drain. The resulting product water is a cleaner, safer water. These residential units are point of use or sink applications. Asking to do the whole house does not take into account; storing the production water and other drawbacks to the installation and operation of an RO system. Commercial or industrial RO systems can be very complicated, expensive and are designed for specific needs and applications.

Drawbacks to an RO unit

The drawbacks are why EWS provides the consumer a selection of product and why we include this information to help you decide what product is right for you. Here are only a few things to consider.

- **WASTE:** RO can waste up to 20 gallons of water for one produced (our ratio is a low 3 gallons per 1).
- **AGGRESSIVE & CORROSIVE:** RO produce very aggressive water. You can not plumb the filtered water in copper (the water will eat away or leach the copper) and, if cross-connected to other sources such as an ice-maker, it may provide warranty or service issues. When bottled water is produced, one of the methods to produce that water is reverse osmosis, however essential minerals are added back “for a pure, fresh taste” as quoted on any label of Dasani, a bottled water produced throughout the USA by Coca Cola. Please note - all spring waters, bottled at the source, have natural minerals and total dissolved solids of varying degrees, which provide the consumer a choice based on taste. (see Evian, Panna, Pellegrino, etc...)
- If an RO system is working correctly, the water can taste flat (like distilled) or metallic. The water produced may be wet, however your plants may not like it. The water is aggressive, it flushes, and does not allow for assimilation starving the plant which may be a drawback for you as well.

When is an RO appropriate to use?

See the following page on rejection rates and all those scary things. If you’re on municipal water, call your utility and request a recent report. Those items on that list are highly regulated. They are either not in your water or municipally treated, and therefore RO can be redundant and unnecessary. If you’re on well water, have your water completely and independently tested. Do not trust a local salesman. He’s the guy who’s usually pushing RO along with the softener, so the RO can take the salt out of the water that the softener put in!

Are you looking for better tasting water? Reverse Osmosis or a Drinking Water Filtration System?

This may be the best place to start and finish. The RO unit would **not** take out taste and odor, chlorine or any VOCs if not for the Carbon (GAC) filter. Maybe you simply need the advanced Essential Drinking Water System (DWS). To upgrade to lead and cysts removal, the RO is fine, but so is the DWS. Bacterial safeguard? Add our UV option to your RO unit or see the complete DWS-UV as an alternative.

□ **Frequent Question - Removal of fluoride?**

- Yes Remove the fluoride, I’m allergic - Use RO as your sink water filtration system to remove fluoride from drinking or cooking
- No Do not remove - I want the fluoride. Then use any of the drinking water system options (DWS or DWS-UV), as mentioned above which will not remove fluoride.

□ **The Bottom Line - Filtration at the Sink - Reverse Osmosis or a Drinking Water Filtration System.**

Drinking water systems take up less room (RO has a storage tank), make as much water as you like (RO have limited production) are easier to install and maintain, can be cross-connected without issues, have less hassles, and are less costly (RO have drain connections, need an air gap by some codes, and make noise during production). However, if an RO is required based on your taste, needs, concerns and/or local water conditions at least you made an informed decision and have been provided a complete selection of superior RO product by EWS for proper application.

Last note: Why only a 3-stage RO System when there are so many systems with more stages?

Most offer more poor filters for replacement and not more or better filtration. The Essential RO3 is a totally complete RO system for municipally treated water, properly specified with the highest capabilities and results. The 4-stage unit is offered (RO4) for municipal water that may be more particulate and simply needs a pre-sediment filter to enhance system longevity or for use on well water of known quality. EWS has 5-stage systems specifically for difficult well water applications only. Correct and truthful specification by EWS.



The Correct Application of Booster Pumps included with all EWS 5-Stage Reverse Osmosis Systems

Booster pumps are critical to the effective performance of reverse osmosis membranes in low water pressure situations (feedwater below 40 PSI and/or high TDS). Along with mechanical and electro-mechanical options, booster pumps enhance RO systems in the following ways and are available in our 5 Stage Series, the RU500T35w/BP or the RU500T35w/UV/BP (with our UV disinfection option):

- Monitoring performance
- Improving membrane efficiency
- Conserving water
- Conserving power
- Shutting down the pump when continuous product water is not necessary

Booster pumps are recommended in reverse osmosis applications where feedwater pressure is less than 40 PSI. Feedwater high in Total Dissolved Solids (TDS) may need a boost, in order to perform within rejection parameters.

FACT:

Over 500 mg/l or ppm TDS, the PSI will be reduced by 1 PSI for every 100 TDS.

Example:

Feedwater that is 2,000 mg/l of TDS will reduce PSI by 15. A booster pump will compensate to allow for proper application. On well-water, know your water pressure (PSI) and your TDS (total dissolved solids).

A booster pump is standard equipment in the EWS 5-Stage Series of Reverse Osmosis Systems (Model #'s RU500T35w/BP or RU500T35w/UV/BP with UV Disinfection option).

PLEASE NOTE:

A booster pump on a reverse osmosis system has only one purpose and that is provide the feed water over the membrane at the proper pressure (as described above) in order to filter properly. A booster pump does not provide faster flow rates or more water.



Warranty Notification

Notification:

This warranty is referenced by EWS, Inc. in all literature, addressed in General Terms and Standard Conditions of Sale, and is published in its entirety in all EWS, Inc. product manuals, websites, and in all service guides supplied with all product.

Limited Warranty:

EWS, Inc., a Nevada corporation, hereby warrants all products to the original consumer purchaser to be free from defects in material and workmanship as stated in the following paragraphs:

- All residential point of use: countertop filtration, in-line filtration, undercounter drinking water filtration, shower filtration, residential reverse osmosis, and canister and filter cartridge point of entry pre-sediment and/or filtration units or systems for one year from date of purchase.
- All residential point of entry: pH decreasing and softener (resin and ion-exchange) systems, Environmental (EWS) Water Systems, Iron Removal units, CWL whole-home (filtration media) systems, pH increasing reagent (sacrificial media) units for 10 years on the tank and riser, 10 years on the ICN conditioner(s) (if applicable) and 5 years on the valve head from date of purchase.
- All commercial systems: Dependent on specification and application, please consult with EWS, Inc. upon specification.
- All filtration medias, resins, cartridges, uv lamps, and/or membranes are not covered by any warranty. Filter media, resin, cartridge, uv lamp, and/or membrane replacement or maintenance schedule will vary and must be replaced, as necessary, as determined by usage and local water conditions.

Product performance may vary based on local water conditions, proper product specification and application, proper plumbing application, setup, installation, startup, maintenance and/or usage. To ensure proper operation, follow all setup, installation, start-up and maintenance procedures as detailed in all service guides.

Not intended for use where water is microbiologically unsafe or with water of unknown quality without adequate disinfection before or after unit(s). The contaminants or other substances removed or reduced by these and any other water filtration or treatment devices are not necessarily in your water. To confirm the presence of any primary and secondary contaminants, have your water supply completely analyzed by an independent and approved facility or if applicable, contact your local water utility for information. Aesthetic, non-health related, or constituents without set federal standards may be part of water testing but are insufficient to determine proper application of any water filtration or treatment device.

EWS, Inc. will replace, free of charge, during the warranty period, any part which proves defective in material and/or workmanship under proper product and plumbing specification and application, normal and proper installation, use, service and proper care as published in detail in all service guides included with product. Labor charges are excluded from any warranty service or repair and are not the responsibility of EWS, Inc. Shipping charges may apply to delivered replacement parts or materials. Charges may also apply for the cost of any replacement media, resin, cartridges, uv lamp and/or membrane from any warranty service or repair. Information can be obtained at any time through a local dealer, distributor, representative or direct from EWS, Inc. and/or on-line at; www.ewswater.com. Replacement parts can be obtained from your local dealer, distributor, online or contractor.

This warranty is the exclusive warranty granted by EWS, Inc. and is in lieu of all other warranties of merchantability and fitness for a particular purpose and is further limited to defective parts replacement only. Labor charges and/or damage incurred in setup, installation, and startup, or repair, or replacement, as well as, incidental and consequential damages connected there with, are excluded, and are not the responsibility of, and will not be paid by EWS, Inc.

This warranty is void for any damages due to improper product and/or plumbing specification and/or application, misuse, abuse, neglect, accident, acts of nature, action of any military or civil authorities, improper handling and transportation, or improper setup, installation, and/or startup, or any violation of instructions furnished by EWS, Inc., or any replacement parts other than genuine parts or replacements supplied by EWS, Inc.

This warranty is not a warranty of merchantability, fitness, taste, aesthetics, and/or performance that may be subject to improper product and/or plumbing specification and/or application, misuse, abuse, neglect, accident, acts of nature, action of any military or civil authorities, improper handling and transportation, or improper setup, installation, and/or startup, or any violation of instructions furnished by EWS, Inc.

This warranty is not a warranty of merchantability, fitness, taste, aesthetics, and/or performance that may be personal and of subjective opinion and that does not relate to the performance of any system.

Warranty Information and the Purchaser's Responsibility

Keep a record of the purchase receipt and/or installation receipt. Purchaser is required fill out warranty registration form(s) on applicable product(s) and register all product by either online @ www.ewswater.com, telephone, postal delivery, fax, e-mail (either register@ewswater.com or information provided to customerservice@ewswater.com). **Failure to do so voids the warranty unless restricted by state regulations.**

EWS, Inc. does not sell, show or make available any information on any consumer in our database. This database is to ensure, if needed, proper warranty service, and good customer service for years to come. Please see our privacy policy published in our website at www.ewswater.com.

Know Your Water:

• If on a municipal system, large or small, it is your right as a consumer to have access to the most recent test results and to expect adherence to federal guidelines, as well as any state or local requirements. Any problems should be reported to the appropriate agencies. Please acquire those municipal test results to become an informed consumer.

• If on an individual well, have your water completely and independently tested. Local code may require a simple test for coliform bacteria to approve a well, however you may be unaware of potential problems for you and/or your home. A local water salesman is looking to close a sale and is going to test for hardness minerals and a few simple and obvious issues, which may or may not be contamination problems. Their solution is almost always the same and yet may provide no resolution to any true problems. Obtain our "Guide for the Private Well Owner" on our website; www.ewswater.com. Review our section on well water testing and applications in our complete catalog with your local distributor, dealer, or our representative or visit our website.

• WARNING:

Some restrictions apply to the use of softeners. Contact your local municipal water district or Gov't Agency. Brine discharge is already restricted on, or may be a problem for, septic applications and waste water treatment facilities. Since some states have already restricted softeners to metered valves to prevent excessive brine discharge, EWS, Inc. only provides metered valving in its line of softeners.

Restrictions on an outright ban may also apply to hot-side only, salt-exchange tanks or services. Local water dealers and other organizations do not inform consumers of these issues and believe these rules are unenforceable. The consumer is ultimately responsible.

Softeners may also provide warranty issues with pools and spas, certain other products and finishes. Softened water should not be used for drinking, cooking, pets or plants and is usually bypassed or "looped away" from the cold side of the kitchen sink. Reverse osmosis, which also has its drawbacks and issues with other products and materials, may be used to remove the salt from the water that the softener put in at the kitchen sink, yet may be misapplied for the actual local water conditions.

Any problems of water quality, or the fitness of any EWS, Inc. product that is associated with any mechanical, construction, application, installation, and/or environmental issue(s) (ie: flow rates, line pressure, piping materials, broken supply lines, changing water conditions; well or municipal water quality, et. al.), known or unknown, of the home or facility will not be considered by EWS, Inc. until such issue(s) have been resolved.

Responsibility for the proper product and/or plumbing specification, application and/or installation of any device manufactured by EWS, Inc. lies with the consumer, their builder contractor, plumbing sub-contractor and any other installer of choice. Items do not specify and/or install themselves. EWS, Inc. has provided many sources to acquire information on the proper application of systems and their installation prior to any purchase. EWS, Inc. manufactures a complete product line of point of use water filtration systems and point of entry filtration, softening and/or conditioning systems and/or appliances.

EWS, Inc. and the distributors of EWS, Inc. will stand behind the warranties of materials and workmanship. However, EWS, Inc. and the distributors of EWS, Inc. and the Environmental Water Systems Product Line do not bear any responsibility for improper applications of product and/or improper installation. It is for this reason that EWS, Inc. provides complete information on all product for your understanding, specification, application and selection, and proper plumbing application and installation.

To obtain warranty service support, contact your local dealer or contractor from whom you obtained the product or contact EWS, Inc., Customer Service, via phone, fax, or email.

ALL FILTRATION PRODUCT PROUDLY MADE & ASSEMBLED IN THE USA



www.ewswater.com O: 702.256.8182; M-F 8:30am-4:30pm PST E: customerservice@ewswater.com

The EWS, Inc./Environmental Water System Product available through:



Authorized Kitchen & Bath Showrooms, Appliance Showrooms, Building & Plumbing Wholesale Supply Locations and their building, plumbing, HVAC and service contractors, and Authorized Online Distributors.



Contact Information:

EWS, INC. **Environmental Water Systems**

ewswater.com

O: 702.256.8182 (M-F 8:30am-4:30pm PST)

E: customerservice@ewswater.com

F: 702.256.3744

Got a Question..?

Seriously.... Give us a call. We're here to help.

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